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ABSTRACT

This report examines the development of Conduct Disorder (CD) in children and adolescents from the perspective of Hans Eysenck's bio-social theory of personality. The theory views personality as a product of the interaction of temperament and socialization. Eysenck's three-factor model of personality is comprised of Extroversion (E), Neuroticism (N), and Psychoticism (P). The temperament based traits P, E, and N and their interactions are discussed in relation to Eysenck's antisocial behavior hypothesis and the development of CD. The interaction of socialization with temperament in the development of antisocial behavior is also discussed. Intervention suggestions for antisocial behavior based on Eysenck's theory as well as some possible temperament treatment interactions are presented. Interventions for CD identified as well established or as probably efficacious using criteria developed by the American Psychological Association and possible temperament considerations in their use are covered. Effective treatments include parent training groups and videotaped parent training to prepare parents for their role as socialization agents. Finally, the possible contribution of temperament profiles to Kazdin's proposal for the use of a chronic disease model when treating CD is discussed. (Contains 52 references.) (Author/CR)

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Running head: TEMPERAMENT AND CONDUCT DISORDERS

Temperament as a Potential Factor in the Development and Treatment of Conduct Disorders

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Abstract

The development of Conduct Disorder (CD) in children and adolescents is examined from the perspective of Hans Eysenck's biosocial theory of personality. The theory views personality as a product of the interaction of temperament and socialization. Eysenck's three-factor model of personality is comprised of Extroversion (E), Neuroticism (N), and Psychoticism (P). The temperament based traits P, E, and N and their interactions are discussed in relation to Eysenck's antisocial behavior (ASB) hypothesis and the development of CD. The interaction of socialization with temperament in the development of antisocial behavior is also discussed. Intervention suggestions for antisocial behavior based on Eysenck's theory as well as some possible temperament treatment interactions are presented. Interventions for CD identified as well established or as probably efficacious using criteria developed by the American Psychological Association and possible temperament considerations in their use are covered. Finally, the possible contribution of temperament profiles to Kazdin's proposal for the use of a chronic disease model when treating CD is discussed.

Temperament as a Potential Factor in the Development and Treatment of Conduct Disorders

There are many contributing factors in the development of conduct problems (McMahon & Wells, 1998), including a number of biological factors (Niehoff, 1999). Temperament is a biologically based trait that in some cases is a risk factor predisposing individuals to antisocial and aggressive behavior. Eysenck's biosocial theory of personality is one perspective on temperament as a biological risk factor in antisocial behavior (Eysenck, 1995). In Eysenck's model, personality is the product of an interaction between temperament and social experience. It is a model strongly supported by a very long and continuous history of research and development (Eysenck, 1947, 1967, 1981, 1991a, 1991b, 1995; H. Eysenck & M. Eysenck, 1985). In fact, Eysenck's dedication to research on personality has made him the most frequently cited psychologist in the world (Gudjonsson, 1997).

Eysenck's theory is sometimes referred to as a three-factor model of personality in which the three factors are Extroversion (E), Neuroticism (N), and Psychoticism (P). Eysenck (1991a) points out that nearly all large-scale studies of personality find the equivalent of the three traits he proposes. Further, the traits are found across cultures worldwide. An individual's position on the traits is consistent across time. Finally, research on the genetics of personality supports the three traits (Eaves, Eysenck, & Martin, 1988). The development of the theory and related research has given considerable attention to measurement. The *Eysenck Personality Questionnaire* developed for research on the model includes both adult and child versions (H. Eysenck & S. Eysenck, 1975, 1993).

Extroversion is hypothesized to be dependent upon the baseline arousal level in an individual's ascending reticular activating system (ARAS) (Eysenck, 1967, 1977, 1997).

Eysenck thinks differences between people on the E trait are due to differences in the functioning of their ARAS. The ARAS serves to stimulate the brain's cortex to activate its cells to produce a state of excitability. The cortex may in turn generate feedback to the ARAS, which either further increases its excitatory input or dampens it. The model attributes cortical efficiency in learning, conditioning, wakefulness, and attention to the ARAS. The ARAS appears to mediate states of cortical arousal, ranging from sleep to extreme behavioral excitation. Eysenck states that an important function of the cortex is to inhibit the behavioral impulses of the lower brain.

In extraverts, high E, the base level of cortical arousal is normally low, and they are less sensitive to stimulation (i.e., it takes a more intense stimulus to produce a response). Further, the behavior of extraverts is less inhibited than that of persons who have higher basal levels of cortical arousal. In introverts, low E, the basal level of cortical arousal is normally high, and they are more sensitive to stimulation (i.e., it takes a less intense stimulus to produce a response). Further, the behavior of introverts is more inhibited than in persons who have lower levels of cortical arousal. The difference in basal arousal between introverts and extraverts is evident in research on their differential response to drugs. This effect is evident in what is called the "sedation threshold" (Claridge, 1995). Introverts require more of a sedative drug than do extraverts to reach a specified level of sedation. Conversely, introverts require a smaller dose than do extraverts of a stimulant drug to reach a specified level of arousal.

Neuroticism (N) is hypothesized to be dependent upon an individual's emotional arousability (Eysenck, 1977, 1997). Differences between people on the N trait, it is suggested, are due to differences in visceral brain activation, which depends upon the hypothalamus and limbic system. The visceral brain activation system (VBAS) exerts its effects through the

autonomic or involuntary nervous system. The range of neural effects extends from activation of glands and muscles, to heart rate, respiration, and perspiration. Differences in the basal level of responsiveness of the VBAS can result in a tendency for weak to intense levels of emotional activation. Emotionally stable individuals, low N, are not very susceptible to emotional arousal and are resistant to respondent conditioning. Emotionally excitable individuals, high N, are very susceptible to emotional arousal and are more susceptible to respondent conditioning including anxiety-based inhibitions on behavior. In states of extreme emotional activation (e.g., rage, despair, or fear), the normal separation of functioning between the ARAS and the VBAS breaks down. In effect, the E and N traits lose their independence when an individual is highly aroused emotionally.

Eysenck (1997) thinks Psychoticism (P) is a polygenic temperament trait. Polygenic refers to a large number of genes each of whose individual effect is small. Each of these "small effect" genes is additive, so that the total number inherited determines the degree of the P trait in the personality. Another group of genes, fewer in number than the first group and having "large effects," determine the probability that the person will not only evidence the P trait but will also be at significant risk for developing a psychotic disorder. The person who is high on P has inherited a vulnerability to psychotic disorder but may not succumb to a psychotic illness, particularly when the "large effect" genes are not present. Instead, a person who embodies a large number of the traits associated with the "small effect" genes and who is high on P may develop a pattern of antisocial and aggressive behavior.

The P trait in personality is the one with the most direct link to the problem of Conduct Disorder (CD). Research indicates a relationship between high P and diagnoses such as

Antisocial Personality Disorders, Schizotypal Personalities, Borderline Personalities, and Schizophrenia (Claridge, 1995; H. Eysenck & S. Eysenck, 1976; Monte, 1995). The relationship between psychotic tendencies in high P individuals is indirectly supported by the follow-up research of Robins (1979). Robins found that approximately 25% of individuals with a diagnosis of CD in childhood developed psychotic conditions in adulthood.

Children and youth with CD are characterized as lacking empathy, being cruel, egocentric, and not compliant with rules (American Psychological Association, 1994). This description is congruent with the description of someone who scores high on Eysenck's P Scale. H. Eysenck and S. Eysenck (1976) characterized the high P individual as cruel, lacking empathy, hostile, and sensation seeking. The most easily identified groups that would be expected to include a large number of individuals high on the P trait are delinquents and adult criminals. Thus, a number of studies have examined these populations for the presence of high P trait scores (e.g., Chico & Ferrando, 1995; Gabrys, 1983).

Eysenck's theory predicts that individuals high on the P trait will be predisposed to developing antisocial behavior (Eysenck, 1997). Further, an individual high on both the P and E traits will be predisposed to developing antisocial, aggressive behavior. Aggressive behavior is associated with low cortical arousal (high E) because a person with a relatively under reactive nervous system does not learn restraints on behavior or rule-governed behavior as readily as do individuals with a higher basal level of cortical arousal. Finally, when such an individual is high on the N trait as well, this will add an emotional and irrational character to behavior under some circumstances. Individuals who are high on the P trait and are higher on the N than on the E trait will be predisposed to developing antisocial behavior but are less likely to develop aggressive

behavior. Finally, antisocial individuals typically score lower than others on the *Eysenck Personality Questionnaire's* Lie (L) Scale. The L Scale is a measure of the degree to which one is disposed to give socially expected responses to certain types of questions. A high score on this scale suggests that the respondent is engaging in impression management. A low score suggests indifference to social expectations. The strongest form of Eysenck's antisocial behavior (ASB) hypothesis would be high P, E, and N with low L.

In a review of research on the ASB hypothesis in children and adolescents, Kemp and Center (1999) found strong support for Eysenck's ASB hypothesis. Ninety percent (18 of 20) of the studies reviewed had a positive finding for the P Scale (see Table 1). None of the studies reported contrary findings for the P Scale prediction. Sixty-three percent (12 of 19) studies had a positive finding for the E Scale. One study had a contrary finding for the E Scale. Sixty-five percent (11 of 17) studies had a positive finding for the N Scale. Two studies had contrary findings for the N Scale. Seventy-six percent (13 of 17) had a positive finding for the L Scale prediction. One study had a contrary finding for the L Scale. Variability in the base number of studies is due to a failure to evaluate or report data for one or more of the scales in some studies.

Insert Table 1

About here

In summary, very strong support was found for the P Scale prediction and strong support for the L Scale prediction in subjects with verified, teacher-identified, or self-reported antisocial behavior. The most important component in the ASB hypothesis is the P Scale (Eysenck, 1977).

The L Scale plays a confirmation role in the ASB hypothesis. A low score on this scale suggests that an individual's socialization has probably not been adequate to constrain his or her predisposition for developing antisocial behavior. The review also found moderate support for elevated E and N Scale scores. The E and N Scales represent contributing factors in the development of antisocial behavior. Extroversion contributes a predisposition for impulsive and sensation seeking behavior. Neuroticism contributes emotional intensity to antisocial behavior.

Since both E and N are contributing rather than primary components in the hypothesis, one would expect weaker support for elevated E and N scores in subjects with ASB. Further, the P, E, and N Scales are orthogonal, and elevation on one scale is independent of elevation on another scale (H. Eysenck & S. Eysenck, 1975; Monte, 1995). Also, given that the scales are orthogonal one would expect, on a statistical basis, to find far more individuals deviant on one scale than on two scales, on two scales than on three scales, and on three scales than all four scales. Thus, the CD population is not likely to be temperamentally homogeneous (Eysenck & Gudjonsson, 1989). Variability among children and adolescents with CD on the P, E and N Scales should be expected.

Eysenck has emphasized the role of temperament in the predisposition for antisocial and aggressive behavior, while acknowledging the importance of socialization experiences in interaction with temperament. Lykken (1995), a psychologist at the University of Minnesota, attributes the alarming rise of antisocial behavior largely to inadequate or inappropriate socialization. However, Lykken distinguishes between antisocial individuals who have a temperamental predisposition for antisocial behavior and those that are purely the result of poor socialization. He refers to the former as psychopaths and the latter as sociopaths. Lykken argues

that sociopaths are reared in environments with little structure and unpredictable or harsh parenting. This is similar to the type of environment identified by Patterson, Reid and Dishion (1992) in their research on families of antisocial boys. The result of poor socialization is an individual with a weak, underdeveloped conscience and poorly developed rule-governed behavior (Lykken, 1995).

Lykken (1995) discusses three different temperament genotypes and their relationship to socialization. The first genotype, the easily socialized genotype, is somewhat rare. A child with this genotype often achieves good socialization even with socially inadequate parents. The second genotype, the average genotype, is the most common and requires parents of at least average competence for good socialization. Children with the average genotype and socially inadequate parents are at risk for developing sociopathic behavior. The third genotype is the hard-to-socialize genotype. This genotype is the one from which antisocial and aggressive behavior most easily develops. It is also the genotype from which psychopaths are most likely to arise. A child with a hard-to-socialize genotype will require highly competent parents to attain adequate socialization. Even with such parents, factors such as neighborhood conditions and peer influences may play a determining role in the development of antisocial behavior. According to Hare (1993), psychopathic behavior begins early, is more severe, and has a very poor prognosis. In fact, Cleckley (1988) suggests that psychopaths are as far removed from normal human experience as the psychotic.

The prognosis for children and adolescents with sociopathic behavior varies depending on the age at which their behavioral symptoms began. Patterson and Yoerger (1993) characterize children with a history of sociopathic behavior before the age of 14 as early starters

and indicate a poor prognosis. Sociopathy that doesn't become evident until after the age of 14 (i.e., late starters), according to Patterson and Yoerger, has a much better prognosis. Late starters who have had a period of appropriate socialization experiences will usually abandon their antisocial behavior by late adolescence or early adulthood (Lykken, 1995).

Intervention and Temperament

In a review of studies on interventions for antisocial behavior, Eysenck and Gudjonsson (1989) found support for the use of behavior modification techniques in the treatment of antisocial behavior. Behavior modification techniques suggested as potentially useful for treating delinquents included:

1. Differential reinforcement of incompatible and alternative behaviors.
2. Time-out and response cost for problem behaviors.

Eysenck and Gudjonsson (1989) also found support for the use of cognitive-behavioral procedures employing social-learning principles. They suggested teaching:

1. Rational self-analysis,
2. Self-control techniques,
3. Means-end reasoning, and
4. Critical thinking skills.

There are several differential effects predicted from Eysenck's model that could be important when planning an intervention. First, the high E delinquent will not respond well to punishment intended to inhibit behavior previously associated with reward. Second, the high N and high E delinquent will be most responsive to interventions employing reinforcement. Third, the high N and low E delinquent will be most responsive to interventions employing punishment.

Finally, the high P delinquent will be the least responsive to behavioral interventions. Wakefield (1979) has worked out the intervention implications for Eysenck's theory in some detail. He discusses these implications for 12 personality patterns representing variations of P, E, and N (see Tables 2 & 3).

Insert Table 2 & 3

About here

Efficacy of Interventions for Antisocial Behavior

Educators and other professionals faced with the rise in antisocial behavior need effective intervention strategies. Unfortunately, the majority of intervention strategies for antisocial behavior have met with dismal failure (McMahon & Wells, 1998). In an effort to identify empirically supported psychosocial interventions, Division 12 (Clinical Psychology) of the American Psychological Association created a Task Force to establish criteria for identifying empirically validated interventions. Section 1 (Clinical Child Psychology) of Division 12 subsequently employed these criteria (Lonigan, Elbert, & Johnson, 1998, p. 141) to identify effective interventions for childhood disorders (see Table 4).

Insert Table 4

About here

The review undertaken for conduct problems covered the years 1966 through 1995. This review examined 82 separate studies that included a total of 5,272 children and adolescents (Brestan & Eyberg, 1998). The review of published intervention studies relative to the criteria adopted identified only two well-established interventions, Patterson's parent training and Webster-Stratton's videotaped parent training (Patterson, 1974; Patterson, Chamberlain & Reid, 1982; Webster-Stratton, 1984, 1990). The review identified 10 probably efficacious treatments. Two of the more promising probably efficacious treatments included multisystemic treatment and rational-emotive therapy.

Well Established Treatments

Patterson, Cobb, and Ray (1973) conducted the first evaluation of Patterson's parent training program. The procedures employed in Patterson et al. have been replicated and evaluated numerous times by researchers from within Patterson's group and by independent researchers (e.g. Patterson, 1974; Weinrott, Bauske & Patterson, 1979).

Patterson's intervention model targets parenting practices that contribute to the development of antisocial behavior within a context of coercive interchanges. A coercive interchange is characterized by aversive behavior in one person being contingent on the behavior of another person (Patterson et al., 1992). For example, a mother may demand that her son stop watching television and complete his homework. The child may then become oppositional, and his mother withdraws her demand. The parent's behavior has reinforced the likelihood that the child will use coercive behavior in the future to counter control.

According to Patterson and his colleagues, the homes of boys with antisocial behavior differ from the homes of normal boys in several ways (Patterson, 1974; Weinrott, et al., 1979).

First, the parents of antisocial boys do not consistently reinforce prosocial behavior. Second, coercive behaviors are not effectively punished. Third, the families of antisocial boys reinforce coercive behaviors (Patterson & Yoerger, 1993). As an antisocial child's coercive skills increase, parental monitoring of the child diminishes (Patterson et al., 1992). Patterson's model for the acquisition and use of coercive behavior makes parent training a logical intervention for antisocial children.

The parent training process developed by Patterson and his associates is clear and sequential. An intake conference focusing on a child's behaviors is conducted followed by home observations of the family. After this introductory phase, parent training begins and includes:

1. Teaching the basic principles of social learning and behavioral charting.
2. Teaching parents to pinpoint, observe, and chart problem behaviors.

After the initial training, parents are asked to collect three days of baseline data on a selected behavior, such as noncompliance. Parent progress is supervised through phone conversations with a trainer. Following this phase, parents participate in a parent group.

A parent training group is composed of three to four sets of parents who meet one evening each week. Parents are taught to reinforce prosocial behaviors with both tangible and social reinforcers. The parents are also taught to use behavioral contracting and point systems. Finally, parents learn strategies like time-out for handling noncompliant and aversive behavior. Training is typically complete after a family has worked through three to four target behaviors. This generally takes from eight to 12 sessions. Intervention using Patterson's model has been very effective for families with children 12 years of age and under, but effect on adolescents has been mixed (Bank, Marlowe, Reid, Patterson & Weinrott, 1991; McMahon & Wells, 1998).

The second well-established intervention for conduct problems in children, Webster-Stratton's videotaped parent training, is designed for younger children. Webster-Stratton's program is an intervention that can be widely disseminated and is relatively inexpensive (Webster-Stratton, 1984). The underlying objective for Webster-Stratton's program is to realign the parent-child relationship by teaching parents operant learning based techniques for behavior management (Webster-Stratton, 1984). A unique component of Webster-Stratton's intervention is the use of videotapes to focus instruction. The videotapes feature between 180 and 250 two-minute vignettes that illustrate both desirable and undesirable parent-child interactions. After each vignette, parents in small groups discuss the behavioral dynamics in the vignette with a trainer (Webster-Stratton, 1984; Webster-Stratton, Kolpacoff, & Hollinsworth, 1988). Homework is assigned to parents to give them experience with applying newly learned strategies with their child (McMahon & Wells, 1998).

The videotape parent training has been conducted with different delivery models such as self-administered (e.g., Webster-Stratton, Kolpacoff, & Hollinsworth, 1988) and self-administered with trainer consultation (e.g., Webster-Stratton, 1990). Trainer led groups have produced slightly better results in comparison to other delivery methods (Webster-Stratton, Kolpacoff, & Hollinsworth, 1988).

It is interesting that both of the intervention programs in the well-established category are programs directed at better preparing parents for their role as socialization agents. Some (e.g., Wells, 1994) think that interventions like parent training are best suited for children with milder behavioral difficulties. The authors would rephrase this to say that parent training is an approach that will probably be the most successful with parents of children with a typical temperament

profile (i.e., average E and low or average P and N). However, this approach addresses a critical need of parents of troubled children with either a typical temperament or a difficult temperament. Differentiating between parents of children with typical and difficult temperaments could possibly enhance the effectiveness of the approach. Parents of children with a difficult temperament profile probably require both education about their child's predispositions and more extensive training in child management techniques.

Probably Efficacious Interventions

Multisystemic treatment (MST) approaches the problems of adolescents with CD within the context of multiple systems including the family, school, and community (Henggeler et al., 1986; Henggeler, Melton & Smith, 1992). Studies evaluating the effectiveness of MST have been conducted almost exclusively with juvenile delinquents with a history of violent behavior (e.g., Bourdin et al., 1995).

The therapeutic procedures used by MST are present oriented and problem focused (Henggeler et al., 1986, 1992). The intervention may include both a participant's parents and peers. MST is highly individualized for an individual participant's needs (e.g., weak and ineffective parents would be instructed on the use of an authoritative parenting style) (Henggeler et al., 1986). Sessions are often conducted in a participant's home and take from 15 to 90 minutes. Treatment typically lasts for 13 weeks and the therapist is on call seven days a week, 24 hours a day (Henggeler et al., 1992).

MST was found to be significantly more effective than individual therapy or supervised probation in deterring future arrests and decreasing the seriousness of future offenses in the event of recidivism (Bourdin et al., 1995; Henggeler et al., 1992). The cost per participant for MST

was about $2,800 in contrast to the cost of incarceration per individual of $16,300 (Henggeler et al., 1992). These positive findings for MST make it a promising approach for future research on intervention with juvenile offenders.

MST is an individualized approach to treatment in which programming will vary significantly across clients. Wakefield (1979) discusses the use of temperament profiles (see Table 2) for individualizing instruction and discipline. Temperament profiles might also be profitably applied to the conduct of MST, which emphasizes individualization. Knowledge of a client's temperamental predispositions should improve any effort to work through strengths to compensate for weaknesses.

A second intervention classified as probably efficacious, rational-emotive therapy, employs a less intense intervention. Rational-emotive therapy (Ellis, 1962, 1971, 1983) focuses on identifying irrational beliefs and modifying or replacing these beliefs. Rational-emotive therapy is a structured, goal-oriented intervention (Block, 1978). Block compared the efficacy of rational-emotive therapy with psychodynamic group therapy in a sample of 10th and 11th grade adolescents characterized as having significant academic and disciplinary problems (e.g., cutting class, being tardy, low GPA, and referrals to administration). Both groups met five days a week, 45 minutes a day for 12 consecutive weeks. Rational-emotive group participants demonstrated a marked improvement in truancy, tardiness, and office referrals in comparison to the psychodynamic group.

Rational-emotive therapy, which focuses on the effects of irrational thinking on behavior, should also profit from the use of a temperament perspective. Individuals high on the N trait

appear to be the most susceptible to irrational thinking. Thus, one would expect that troubled youth who are high on the N trait would benefit the most from this type of approach.

Other probably efficacious treatments that focus on adolescents exhibiting CD include assertiveness training (Huey & Rank, 1984) and anger control training with stress inoculation (Schlicter & Horan, 1981). Huey and Rank's assertiveness training used peer and counselor led groups to foster discussion of problem topics such as anger and rule compliance. Schlicter and Horan's anger control training attempted to help adolescents define anger and recognize recent angry episodes in their lives. Stress inoculation procedures such as self-prompting, positive imagery, and backward counting were also employed. These interventions yielded moderate research support when contrasted with a no-treatment control group.

The interventions classified as probably efficacious provide alternatives for practitioners working with older CD adolescents. Some of these interventions, such as MST, appear highly promising but are intensive and time-consuming. Interventions that are considered well established or probably efficacious both need extensive monitoring and follow-up due to the long history of failure for interventions for antisocial children and adolescents (Kazdin, 1987, 1993).

The Chronic Disease Model and CD

Kazdin (1987) suggested that practitioners involved in therapy with children or adolescents diagnosed with CD might need to conceptualize CD from a medical perspective, namely the chronic disease model. Kazdin compares CD to diseases such as alcoholism and diabetes in which life long monitoring and treatment are necessary to ensure a functional outcome. Kazdin points out that children and adolescents with CD sometimes show significant improvement following time-limited intervention, but soon revert to antisocial behavior when the

treatment is removed. Children and adolescents with CD, it is suggested, may always require some form of monitoring and treatment. Such monitoring should probably take place at least every six months and be followed by booster treatments if indicated (Kazdin, 1993).

It is doubtful that all children exhibiting antisocial behavior need the long-term monitoring and treatment implicit in a chronic disease model. Temperament may provide a key for identifying individuals most likely in need of treatment under a chronic disease model. It is probable that most of the individuals that need long-term monitoring and treatment will be those with a difficult temperament profile.

Conclusion

The problem of antisocial behavior is a complex one with no certain solution in sight. Effective treatment for antisocial and aggressive behavior will probably require careful consideration of biological, cognitive, and environmental factors. The authors think that more consideration needs to be given to biological factors such a temperament than has been the case in the past.

One thing that seems clear from the review of 82 treatment studies done by Section 1 of Division 12 of the APA is that there are a variety of programs and strategies available. What is certainly needed is a more systematic effort to evaluate the efficacy of many of the treatments being proposed and used. The number of approaches meeting the criteria for well-established interventions was quite small in relation to the body of literature reviewed. On one hand, the scope of the problem is certainly broader than can be addressed by the two interventions identified as empirically established. On the other hand, we should feel ethically constrained about the use of interventions that have not been adequately validated.

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Table 1

Summary of Research Findings from Studies Evaluating Eysenck's ASB Hypothesis in Children and Adolescents (Kemp & Center, 1999).

Trait Letter	Number of Studies	Positive Findings	Negative Findings	Neutral Findings
P	20	18	0	2
E	19	12	1	6
N	17	11	2	4
L	17	13	1	3

Table 2

Eysenck's P, E, and N Combinations with Descriptive Labels from Wakefield (1979).

PEN Combinations	**Descriptive Labels**
1. Low or Avg P, Avg E, Low or Avg N	Typical, The majority of children.
2. Low or Avg P, High E, Low or Avg N	Sociable and Uninhibited
3. Low or Avg P, Low E, Low or Avg N	Shy and Inhibited
4. Low or Avg P, Avg E, High N	Emotionally Over-reactive
5. Low or Avg P, High E, High N	Hyperactive
6. Low or Avg P, Low E, High N	Anxious
7. High P, Avg E, Low or Avg N	Disruptive and Aggressive
8. High P, High E, Low or Avg N	Extremely Impulsive
9. High P, Low E, Low or Avg N	Withdrawn and Hostile
10. High P, Avg E, High N	Frequently Agitated
11. High P, High E, High N	Very Disruptive and Aggressive
12. High P, Low E, High N	Very Anxious and Agitated

Table 3

A Summary of Wakefield's (1979) Recommendations in Four Areas for Eysenck's Three Temperament Source Traits.

	Behavior	Arousal	Learning	Discipline
High E	Works quickly Careless Easily distracted Easily bored	Works well under stress from external stimulation	Focus on major points Needs continuous reinforcement Good short-term recall Does best in elementary school	Most responsive to rewards and prompts, but also responsive to punishment and admonitions
Low E	Works slowly Careful Attentive Motivated	Works poorly under stress from external stimulation	Intermittent reinforcement is sufficient Good long-term recall Does best in high school	Most responsive to punishment and admonitions, but also responsive to rewards and prompts
High N	Over reacts to emotional stimuli Slow to calm down Avoids emotional situations	Easy arousal interferes with performance, especially on difficult tasks Susceptible to test anxiety	Compulsive approach to learning Can study for long periods Does best in high school	Similar to low E but amplified High N combination with low E requires a subdued approach
Low N	Under reacts to emotional stimuli Quick recovery from emotional arousal	Hard to motivate Tends to under-achieve Needs high arousal to sustain effort on easy tasks	Exploratory learner. Short study periods best Does best in elementary school	Similar to high E However, both reward and punishment need to be more intense
High P	Solitary Disregard for danger Defiant and aggressive	Seeks stimulation for an arousal high Confrontation and punishment may stimulate	Slow to learn from experience Impulsive responses Creative, if bright	Stimulated by punishment and threats Responds best to highly structured settings
Low P	Sociable Friendly Empathetic	Not sensation seeking Can be too "laid back"	Teachable Convergent thinker Does well in school	Responsive to both reward and punishment

Table 4

Criteria for Well-Established and Probably Efficacious Psychosocial Interventions (Lonigan Elbert, & Johnson, 1998)

Well-Established Interventions

1. At least two well-conducted group-design studies, conducted by different investigatory teams, showing the treatment to be either

a. Superior to pill placebo or alternative treatment, or

b. Equivalent to an already established treatment in studies with adequate statistical power, or

2. A large series of single-case design studies (i.e., $n > 9$) that both

a. Use good experimental design, and

b. Compare the intervention to another treatment, and

3. Treatment manuals used for the intervention preferred, and

4. Sample characteristics must be clearly specified.

Probably Efficacious Interventions

1. Two studies showing the intervention more effective than a no-treatment control group, or

2. Two group-design studies meeting criteria for well-established treatments but conducted by the same investigator, or

3. A small series of single case design experiments (i.e., $n > 3$) that otherwise meet Criterion 2 for well-established treatments, and

4. Treatment manuals used for the intervention preferred, and

5. Sample characteristics must be clearly specified.